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T. Sharratt

A
SHORT DESCRIPTION
OF THE
VICKERS LIGHT AUTOMATIC GUN
(CLASS "C")

VICKERS LIMITED,
LONDON.
1915.

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'VICKERS LIGHT AUTOMATIC GUN.

1 THE WATER JACKET.

The water jacket is of steel, fluted to give greater strength and also to give a larger air cooling surface. It holds about $7\frac{1}{2}$ pints of water and is fitted with a front and rear gland and steam tube as in Class "I," but much lighter; the rear end is arranged so as to allow water to surround the breech end of the barrel. The inside of the jacket is tinned to prevent rust, and there is no ejector tube.

2 THE BREECH CASING.

The breech casing consists of two plates riveted to a bottom plate and to the water jacket, the plates themselves being strengthened with longitudinal and vertical ribs. They are fitted inside with the usual cams for controlling the path of the extractor, and are lighter and about one-third less in depth than Class "I."

On top there are two covers, front and rear, and closing in the rear is the handle block or rear cross-piece.

3 THE BOTTOM PLATE.

The bottom plate is of steel and has a slide which is opened when firing to allow the empty cartridge cases to fall out of extractor, and closed when travelling, to keep dust out of the mechanism. The bottom plate is also provided with lugs for making the connection to the elevating gear of the mounting by means of a joint pin.

4

THE COVERS.

There are two covers, front and rear. The front covers the feed block; the rear covers the lock, connecting rod, crank, etc., and carries cover lock, trigger bar and spring, also two very light steel guides (which replace the cover springs and gunmetal block in Class "I"). The rear ends of these guides are curved to ensure the extractor falling at rear end of cams. The tangent sight is attached to the top of the rear cover.

5 THE REAR CROSS-PIECE.

The rear cross-piece is hinged to the rear bottom end of side plates and is secured by a "T" headed pin which also serves as a tool for stripping the lock. The rear cross-piece also carries the firing lever, trigger bar lever, safety catch, and safety-catch spring with piston. The hand grips being hollow are used as oil reservoirs, and are provided with milled heads into which oil brushes are fitted.

6 THE BARREL.

The barrel is slightly different to Class "I" and is not interchangeable with it; it also differs from Class "I" in that it can be used either side up, there being no slots for the side plates to be hooked to. The gunmetal valve also has been done away with, the forward thrust being taken by the block formed on the barrel itself. The barrel is provided with trunnions for the side plates, as in Class "I."

7 THE SIDE PLATES.

The side plates or recoil plates are similar to the Class "I," but are much lighter, the lock guides in

this case being at the bottom. They are both fitted with side plate springs for holding up the extractor and are attached to the barrel trunnions.

8

THE CRANK.

The crank is similar to Class "I," but is made to rotate upwards, thus it has been possible to reduce the depth of the breech casing. This also reverses the action of the crank handle, which is now pulled to the rear for loading and thrown backwards in firing.

9

CONNECTING ROD.

The connecting rod is fitted with a bayonet joint for connecting to the lock, and also has an adjusting nut for taking up the wear and tear of the gun by means of washers.

10

CRANK HANDLE.

The buffer spring and resistance piece have been dispensed with, and a friction roller introduced to obtain the accelerated motion of the lock. This is done by the curve on toe of crank handle being forced quickly round the roller, the rebound being obtained by the upper part of handle striking the roller on top.

11

CHECK LEVER.

The check lever is in front of crank handle, and is made positive by a small spring and piston.

12

THE FUZEE.

The fuzee fits into the left arm of the crank by a key and keyway, and in place of a fuzee chain there are two strong links.

13

FUZEE SPRING AND SPRING BOX.

There is a fuzee spring as in Class "I," but the spring box being of steel is considerably lighter.

14

LOCK CASING.

The lock casing is much smaller and lighter, has only one extractor stop, and a fixed axis pin for safety sear.

15

THE EXTRACTOR.

The extractor is much shorter, has no extractor spring, and has, at each side, recesses for the side plate springs.

16

THE GIB.

The gib is much stronger, and the recess for the base of cartridge is in the gib itself.

17

SAFETY SEAR AND SPRING.

As in Class "I," there is a safety sear with spring, but the safety sear has a slot which engages with the fixed axis pin in the lock casing.

18

FIRING PIN.

The firing pin has an elongated slot in the body to allow the side lever axis bush to pass through.

19

THE TUMBLER.

The tumbler is the same as Class "I," but is pivoted on a pin having a shoulder and key fitting into a keyway in lock casing. This pin protrudes on each side of the lock casing and forms the axis for the extractor levers.

20

THE TRIGGER.

The trigger is somewhat smaller, and is pivoted on a pin which is retained by the extractor levers.

21

THE EXTRACTOR LEVERS.

The extractor levers are separate and fit on the tumbler axis pin. They are fitted with a strong bent called the fifth motion bent, and are held on by the side levers.

22

THE SIDE LEVERS.

The side levers are made in one piece, fitted with a bayonet joint for connecting to the connecting rod, and have a deep bent for the fifth motion. Two projections on the front end, working in slots cut in the lock flanges prevent any tendency of the side levers to open out. The side levers are secured to the lock casing by a bush and spring pin.

23

THE LOCK SPRING.

The lock spring is of the usual pattern and is inserted in the lock by hand, by forcing the bow of the spring into place in the lock casing. No axis pin is required, the spring being retained in position by its initial compression.

24

THE FEED BLOCK.

The feed block is of steel, having no roller, and its bottom pawls, pivoted on a spring axis pin, are connected by a plate. There is a bottom pawl spring as in Class "I."

25

THE FEED SLIDE.

The feed slide has a slot into which the stud on upper lever fits. The top pawls are each fitted with a thumb-piece which is depressed when it is desired to withdraw the ammunition belt from the feed block. The pawl spring is in one piece and dovetails to the slide.

26

THE FEED LEVERS.

The upper lever fits on to the lower lever by a hexagon, and is secured by a spring pin.

27

MUZZLE ATTACHMENT.

In order to augment the force of recoil a muzzle attachment is fitted which consists of:—Gland, front cone, disc, outer casing or sleeve with spring split pin, also muzzle cup with clamp screw.

TO STRIP THE GUN.

Remove muzzle attachment outer casing with front cone and disc.

Off muzzle cup with clamp screw.

Raise front cover and remove feed block.

Raise rear cover and remove lock.

Off fuze spring.

Out pin and down rear cross-piece.

Out slides R and L.

Out barrel and side plates.

Detach side plates.

Out fuze and remove left side plate.

TO RE-ASSEMBLE.

Place left side plate and secure with fuze.

Attach side plates to barrel.

Insert barrel and side plates.

In slides R and L.

Close rear cross-piece and secure with pin.

On fuze spring.

Replace lock and close rear cover.

Replace feed block and close front cover.

Replace muzzle cup and clamp up tight.

On muzzle attachment outer casing with front cone and disc.

TO STRIP THE LOCK.

Remove lock from gun and "T" pin from rear cross-piece.

Press out side lever pin and bush, and remove side levers.

Detach extractor levers.

Slide off extractor.

Lift sear and fire the lock.

Press out tumbler pin and remove tumbler.

Press out pin and remove trigger and lock spring.

Lift sear and allow firing pin to fall out.

Unhook sear and remove it.

Push out shutter and remove gib and spring.

TO ASSEMBLE LOCK.

Insert gib, spring and shutter, and slide on extractor.

Insert sear.

Insert firing pin.

Place tumbler and insert pin.

Place trigger and insert pin.

Put on extractor levers.

Put on side levers and secure by bush and pin.

Ease firing pin close forward and insert lock spring.

Full cock the lock.

TO STRIP FEED BLOCK.

Press out spring securing pin.

Drive out lower feed lever.

Remove upper feed lever.

Draw out feed slide.

Unhook top pawls.

Remove top pawl spring.

Draw out axis pin and remove bottom pawls and spring.

TO ASSEMBLE FEED BLOCK.

Place bottom pawls and spring and insert axis pin.

Insert top pawl spring.

Hook on top pawls.

Insert feed slide.

Place lower and upper feed levers and drive home.

Insert spring securing pin.

TO PREPARE THE GUN FOR FIRING.

Draw back slide of bottom plate.

Fill water jacket.

Examine feed block. Test top and bottom pawls and springs, and oil the working parts.

Examine lock. Test lock spring, firing pin and gib spring, and oil the working parts.

Examine the bore from the muzzle end, also the muzzle attachment.

Oil the working parts of the gun, the barrel at front and rear, recoil plates, cams, lock guides, crank bearings and also guides on the cover.

Weigh the fuze spring to 8 lbs. on the handle, and when doing so the lock must be taken out of the gun, and replaced only when the correct weight is on the handle.

Replace feed block and lock, put down and secure the covers.

TO LOAD FOR RAPID FIRING.

Place the ammunition box on the right, arrow pointing to the front; pass the belt through the feed block from R to L, pulling it slightly to the front till the bottom pawls hold it. Then turn crank handle to the *rear*, pull belt to left front, and let fly.

Repeat these operations once, and the gun is loaded.

CEASE FIRING.

Turn crank handle to the rear twice, but do *not* touch the belt, raise top and bottom pawls and withdraw the belt; close slide of bottom plate, ease lock spring, and empty the water jacket.

STOPS WHICH MAY OCCUR WHEN FIRING.

Missfire.

The gun would stop firing with the "handle" close down on check lever.

CAUSE.—(a) Bad cap. (b) Broken firing pin.
(c) Weak or broken lock spring. (d) Dirty lock.

REMEDIY.—Turn handle over *once*, pull belt *once* and continue firing. If the gun still missfires change locks, load and continue firing.

Vertical Handle.

CAUSE.—(a) Light charge. (b) Too strong a fuze spring. (c) Broken gib or gib spring.

REMEDIY.—(a) Help the handle over, let fly, and continue firing. (b) If the stop recurs in a few rounds help the handle over, let fly, and ease the fuze spring 3 turns and continue firing. (c) If on helping the handle over it returns to the vertical position instead of the check lever, change locks, load and continue firing.

Handle at Angle of 45°.

CAUSE.—(a) Broken case. (b) Damaged cartridge.

REMEDIY.—Raise the cover, draw back the lock; if the broken case is on the next bullet, clear extractor, load and continue firing. If the broken case is not on the bullet, insert the "clearing plug," press it home with the lock, lay back the lock, remove "clearing plug" with obstruction, load and continue firing.

Handle nearly down—recoiling parts home.

CAUSE.—(a) Too weak a fuze spring. (b) A thick rimmed cartridge.

REMEDIY.—Strike the handle downwards; if it goes, strengthen fuze spring 3 turns; if the handle will *not* go down, raise the cover, press down extractor, draw back the lock, remove thick rim cartridge, load and continue firing.

Handle nearly down—recoiling parts not close home.

CAUSE.—(a) Badly filled belt. (b) Loose bullet left in the belt.

REMEDY.—Turn handle vertical, take the knob in the left hand and the toe of lever in the right, draw back recoiling parts, raise top and bottom pawls and withdraw the belt, then allow the recoiling parts to go home, reload $\frac{1}{2}$ load
as a round is still on face of extractor

Method of taking up wear and tear in Gun.

Raise cover, remove the lock, unscrew the adjusting nut, place on a washer, screw up nut, replace lock and put down the cover.

NOTES.

I. During firing, the water jacket must be refilled, the working parts of gun oiled, and the front fouling disc changed after about every 2,000 rounds.

II. After firing, the gun should be thoroughly cleaned out, all parts examined, belts refilled, gun re-oiled and jacket filled, ready for immediate firing.

III. The gun cannot be fired till the rear cover is down, as the trigger bar is not connected with the trigger bar lever and firing lever till the cover is down and secured.

IV. The gun weighs 28 lbs. with jacket empty, as against 60 lbs. in Class "I."

V. The connecting rod is fitted with an adjusting nut for taking up the wear and tear of the gun by means of washers. These washers are of two thicknesses, .003 in. (No. 1) and .005 in. (No. 2).

Should there be a succession of broken cases, the insertion of a suitable washer is required.





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